

Claims

- [c1] A method and an apparatus for correcting retinal detachments by heat-shrinking a specially designed scleral band equipped with a snap-on custom-made buckle for scleral indentation over the retinal tear region.
- [c2] A method and an apparatus of correcting retinal detachments including the steps of claim 1 such that the heat shrink band is made from a heat shrink material such as a polymer and is equipped with a custom-made buckle to perfectly fit the topological geometry of the retinal detachment region over the underlying choroid and the sclera, the conjunctiva and within the Tenon's space wherein the band is heat shrunk to create a perfect buckle over the retinal tear region to reattach the retina to the choroid and cause absorption of the subretinal fluid.
- [c3] A method of correcting retinal detachments through a small conjunctival incision comprising the steps of inserting an heat shrink band into Tenon's space to the depth of the break; using a custom-designed buckle for scleral indentation in the eye; leaving said member in place until subretinal fluid has absorbed and the retina

has reattached.

- [c4] A method of correcting retinal detachments including the steps of claim 2, the additional step of leaving said member in place for at least three days after reattachment to promote better adhesion.
- [c5] A method of correcting retinal detachments including the steps of claim 2, the additional step of collapsing said member in stages prior to removing same.
- [c6] A heat shrink band equipped with a custom-designed buckle for scleral indentation over the retinal tear for use in the treatment of retinal detachments comprising: a substantially encircling heat shrink band, a custom designed buckle for scleral indentation over the retinal tear, means of heat shrinking the band in a number of stages to gradually drain out subretinal fluid.
- [c7] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a hemi-spherical buckle with a peg in the back for snap on attachment to the band.
- [c8] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a flat-top hemi-

spherical buckle with a peg in the back for snap on attachment to the band.

- [c9] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a hemi-cylindrical buckle with a peg in the back for snap on attachment to the band.
- [c10] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a flat-top hemi-cylindrical buckle with a peg in the back for snap on attachment to the band.
- [c11] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially an oval shaped buckle with a peg in the back for snap on attachment to the band.
- [c12] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a flat-top oval shaped buckle with a peg in the back for snap on attachment to the band.
- [c13] A heat shrink buckle band equipped with a custom de-

signed buckle in accordance with claim 2, wherein the custom designed buckle is essentially a custom-made buckle of irregular shape with a peg in the back for snap on attachment to the band.

- [c14] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the materials used are biocompatible medical grade.
- [c15] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2, wherein the materials used is a silicone synthetic rubber material.
- [c16] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2 wherein the band material used is a medical grade heat shrink polymer such as polyurethane or polyolefin.
- [c17] A heat shrink buckle band equipped with a custom designed buckle in accordance with claim 2 wherein the band material used is a medical grade heat shrink alloy such as shape memory alloys or Nitinol.
- [c18] The surgical implant article of claim 2 wherein said heating means is a hot tip instrument.
- [c19] The surgical implant article of claim 2 wherein said heating means is a laser.

- [c20] The surgical implant article of claim 2 wherein said heating means is radio frequency (RF) waves.
- [c21] The surgical implant article of claim 2 wherein said heating means is electric Joule heating in case of a shape memory alloy band.
- [c22] The surgical implant article of claim 2 wherein said heating means is microwave.
- [c23] The surgical implant of claim 2 where is the scleral band itself is not of heat-shrink material and is a biocompatible polymer such as silicone rubber.